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Identifying Potential Asbestos Exposures in Schools: The Montgomery County Experience

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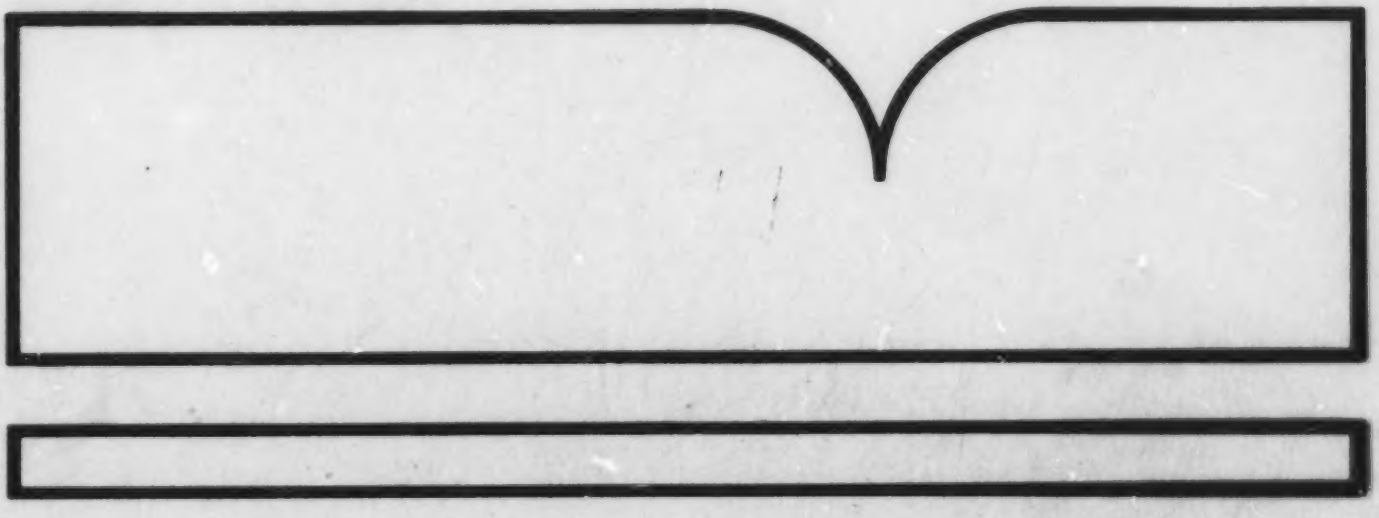

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This report summarizes the experience of the Montgomery County Combined General Health District in their asbestos-in-schools control program. A survey of all schools within the District's jurisdiction was completed. Bulk samples of friable materials were collected and analyzed for their asbestos content, and asbestos exposure scores were obtained for those areas where asbestos was present. Recommendations for appropriate abatement procedures were made based upon exposure scores, and the values of score components.

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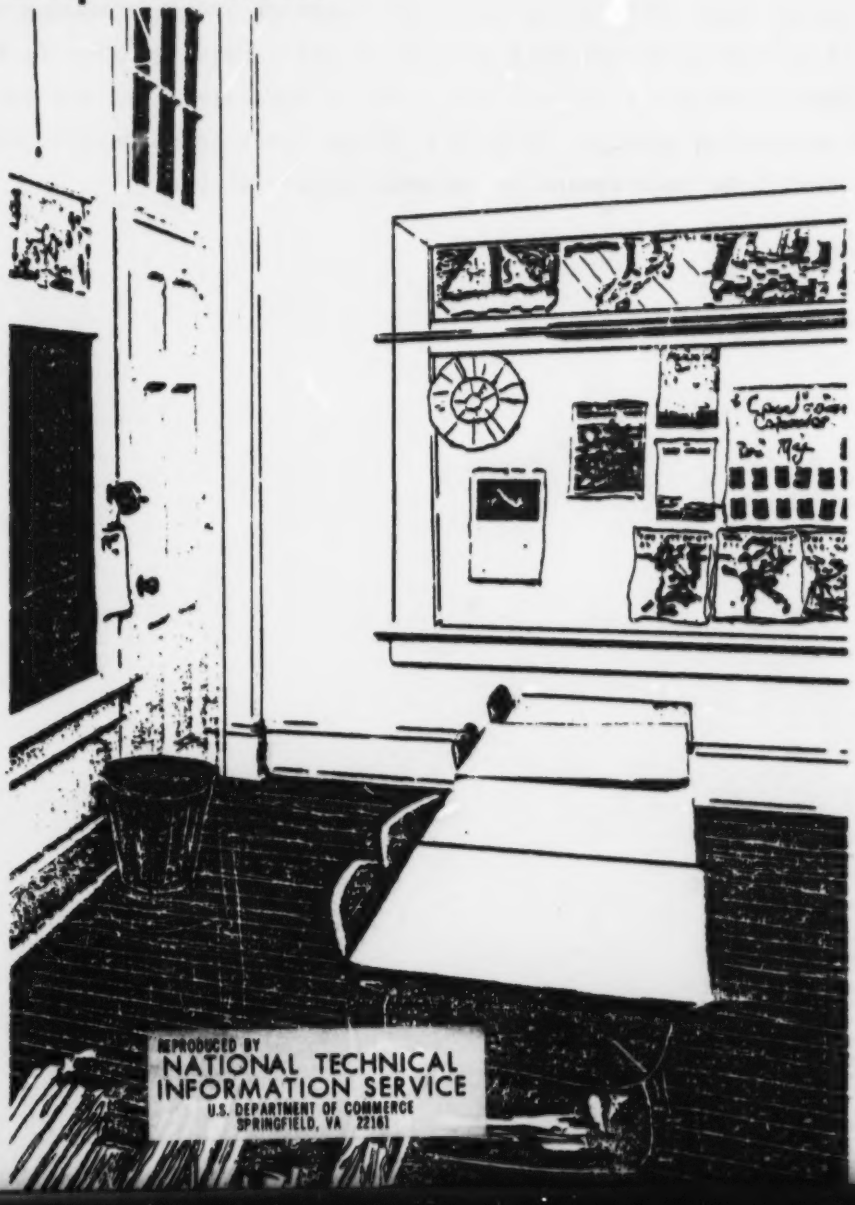

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Identifying Potential Asbestos Exposures in Schools:

The Montgomery County Experience

by
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IDENTIFYING POTENTIAL ASBESTOS EXPOSURES IN SCHOOLS: THE MONTGOMERY COUNTY EXPERIENCE

INTRODUCTION

The Environmental Protection Agency (EPA) has established a guidance program to help State and local officials identify and control potential asbestos exposures in schools (1). This guidance program was established because of the increasing amount of data supporting the existence of a causal relationship between asbestos exposure and asbestosis and cancers of the lung, chest, abdominal lining, and gastrointestinal tract (2).

Officials of the Montgomery County (Dayton, Ohio) Combined General Health District were informed about the potential health problem in their schools, and they completed a survey of all schools within their jurisdiction. The survey provided estimates of the number of students potentially exposed to airborne asbestos fibers and of the potential costs generated by different asbestos-abatement procedures. The experience of the Montgomery County Combined General Health District (MCCGHD) should be of interest to other local health and school officials concerned about potential asbestos exposures in schools.

The Montgomery County Health District has a staff of over 300 persons, and the Health Division's Bureau of General Services has a tradition of conducting school inspections. Thus, there were individuals within the MCCGHD who were familiar with the schools' personnel and physical facilities. The presence of a Bureau of Engineering, which could provide laboratory support to an asbestos identification and control program, further increased the probability of a satisfactory effort. But the 2,000 hours eventually spent by the MCCGHD in their school asbestos project strained the limits of an organization accustomed to spending 400 hours per year on school-related activities.

CHRONOLOGY OF EVENTS

Montgomery County officials first became aware of a potential asbestos exposure problem on March 15, 1979, at a meeting where a State asbestos coordinator described the voluntary EPA guidance program. Fifteen days later, the Director of the Environmental Health Division of the MCCGHD met with people from the General Services and Engineering Bureaus to set objectives and allocate responsibility.

The first order of business was to identify the target population of schools. Within the MCCGHD, there are approximately 200 public schools, which are organized into 16 separate school districts, each managed by a superintendent and a local board of education. The existence of parochial schools and special schools, which needed to be surveyed, increased the size of the task at hand. It was decided that some basic descriptive information about each school in the target population was needed. This information included the year of construction for each school, the dates of any major repair work or remodeling, the existence of files containing school plans and material specifications, and the possibility of future major repair work or remodeling.

On April 16, the District's Division of Environmental Health sent an explanatory letter and a school information form to all school superintendents. The purpose of this communication was to minimize possible overreaction to a scheduled public asbestos-in-schools meeting in nearby Columbus and to collect the needed descriptive information. The letter and school information form are included in Appendix A.

One month later the EPA sponsored a training meeting concerning the survey methodology and the EPA procedure for obtaining an asbestos exposure score. The scoring procedure is described in detail in Appendix B. The EPA procedure requires raters to estimate (1) the asbestos-containing material's general condition, (2) the extent of water damage, (3) the quantity of material exposed, (4) the degree of accessibility, (5) the level of human activity present, (6) the impact of moving air plenums, and (7) the material's friability. EPA's recommendation for estimating asbestos exposure scores is based upon the assumption that the percentage of asbestos present in the material and the seven factors listed above are predictive of cumulative

asbestos air levels. The EPA is reviewing available data to determine if this assumption is reasonable.

On May 21, the survey methodology and the scoring procedure were field tested by supervisory personnel in several schools. Three days later, the experience of the field test was presented to the rest of the staff, and the school superintendents were notified that the survey was about to begin. By June 5, the survey was underway. Supervisors accompanied field staff during the initial part of the survey to increase the reliability of the asbestos exposure score data.

In July, personnel from the Bureaus of Engineering and General Services were sent to the McCrone Institute in Chicago for training in the analysis of the bulk samples being collected by field personnel. By July 31, a survey of 195 schools was completed; over 600 bulk samples had been collected. On September 10, those schools determined to be "positive for asbestos" were reevaluated by supervisors and staff. On September 18, the results of the entire survey were reported to the director of the Environmental Health Division.

On September 19, letters and supplementary materials were sent to the school superintendents. The superintendents of schools without asbestos "problems" were sent a cover letter (see Appendix C) and a copy of the Health District's report on all schools. The superintendents of schools with asbestos "problems" were sent a more detailed cover letter and supporting documentation describing the extent of the asbestos problem in their schools (see Appendix D). This supporting documentation included a table identifying the problem areas within the affected schools; the square footage of the material involved; ratings of material condition, water damage, accessibility, and friability; total asbestos exposure scores; and a column stating the recommended action. A second table presented the square footage of asbestos-containing materials in 23 schools by asbestos exposure scores. A third table described the "cutpoints" that were used to classify asbestos exposure scores. Supporting documentation included copies of the rating forms, from which asbestos exposure scores were calculated, and the laboratory reports, which indicated the presence of asbestos fibers in individual bulk samples.

On October 29, representatives of Montgomery County Schools and the Montgomery County Combined General Health District held a joint news conference to present the findings of the asbestos-in-schools survey to the public. On November 1, an editorial praising the efforts of the Montgomery County Schools and Health District was broadcast on a local television station. The news releases and the editorial are included in Appendix E. On December 3, EPA Region V sent a letter to the Montgomery County Health Commissioner suggesting that Montgomery County's efforts in identifying and controlling potential asbestos exposure in schools might serve as an example for other counties and cities.

INSPECTION ACTIVITIES

The registered sanitarians* employed by the Health District for the asbestos-in-schools survey had undergraduate degrees in a physical science or environmental engineering; thus, they had some experience in collecting data in a systematic manner. Moreover, these sanitarians were familiar with the school buildings from past inspections for other purposes. Maintenance personnel from each school accompanied the sanitarians, who were instructed to examine all rooms, boilers, and pipe coverings. After the survey was underway, it was decided that too much effort was being spent on boilers and pipe coverings, and the staff was told to concentrate upon suspicious spray materials applied to vertical or horizontal surfaces in rooms or hallways.

A draft of the EPA asbestos scoring system was modified and used to characterize suspicious material in a given location (see Appendix B). The modifications of the EPA rating procedure consisted of slightly different codes for some of the more extreme empirical situations. Health District personnel concluded that the coding scheme described in the initial draft of the asbestos scoring algorithm was too "crude," in the sense that information was being lost by grouping phenomena in broad categories.

SAMPLING ACTIVITIES

The persons assigned to collect bulk samples of suspect friable materials were familiar with existing EPA guidelines concerning friable material

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*Sanitarians are a professionally registered class in the State of Ohio as provided under Chapter 4736, Ohio Revised Code.

sampling (1). An effort was made to adhere to these guidelines. Specifically, "one bulk sample was taken for approximately every 5,000 square feet of material having the same color and texture." Additional samples were taken from suspect areas of less than 5,000 square feet if materials of different color or texture were found, and this encouraged oversampling at the start of the survey (samples of every pipe covering were being collected). Supervisors recognized the implications of this enthusiastic initial sampling, and they directed the inspectors to concentrate upon ceiling and wall coverings, which were more likely to release asbestos fibers into the air. Materials that were highly friable and already damaged were always sampled. Undamaged materials of low friability were sampled less frequently.

Plastic 35-mm film canisters were used to remove and contain bulk samples taken from friable materials. The open end of the canister was twisted into the soft materials. A knife was used to scrape or cut out a small sample of hard materials, which were then deposited in canisters. Each container was labeled with a numeric code that identified the school and the area where the sample was collected. The sample ID number, the date the sample was collected, the area sampled, and the school where the sample was taken were recorded separately.

ANALYSIS OF BULK SAMPLES

Personnel from the Montgomery County Bureaus of Engineering and General Services, who had received special training at the McCrone Institute in Chicago, analyzed the bulk samples. For the majority of samples, polarized light microscopy with dispersion staining was the analytical technique used to estimate the percentage of asbestos. Thirty samples were also sent to a laboratory run by the Ohio Department of Health for x-ray diffraction analysis. X-ray diffraction analysis is recommended when a second analytical technique is necessary to confirm an analysis by polarized light microscopy. A colorimetric (chemical) procedure [recently proposed by the National Institute for Occupational Safety and Health (NIOSH)] for the preliminary identification of asbestos in bulk samples was used to complement the internal quality control efforts of the District laboratory. This NIOSH procedure has an estimated specificity (probability of detecting a truly negative observation) of 100 percent.

In general, the identification of asbestos by means of polarized light microscopy with dispersion staining is based upon the difference between the refractive index of the suspect fiber and the index of the liquid medium in which the fiber is immersed. When chrysotile asbestos is immersed in the appropriate liquid, the fibers will transmit a blue color if they are perpendicular to polarized light and a magenta color if they are parallel to it. Amosite asbestos immersed in 1.680 refractive index oil transmits magenta if the fibers are perpendicular to polarized light; it transmits a golden yellow color if the fibers are parallel. The specific procedure used by Montgomery County laboratory personnel is similar to that detailed in McCrone et al., Polarized Light Microscopy (3). A large portion of the bulk sample was divided into three parts, and a subsample was selected from each. The three subsamples were then combined to form the main sample from which material was mounted.

Material was immersed on a microscope slide in Cargille liquid of refractive index 1.550 and covered with a cover slip. Fibers present were examined to determine birefringence, angle of extinction, fiber morphology, and sign of elongation. Identification of more than one asbestos type in a bulk sample required the preparation of additional slides with the appropriate liquid.

The quantity of asbestos present in a given sample was estimated by comparing the appearance of the unknown sample, with the appearance of a known "standard" sample of asbestos-containing material. The appearance of the unknown sample is first characterized by noting the quantity of asbestos fibers showing the appropriate colors in relation to quantities of other fibers and materials present. The appearance of the standard sample with its known percentage of asbestos is then compared with the initially characterized unknown sample. If the microscopist judges that there is a greater (or lesser) percentage of asbestos in the unknown sample than in the standard sample, the initial estimate of the percentage of asbestos present in the unknown sample is revised upwards (or downwards). The District laboratory in Montgomery County compared their unknown bulk samples against a standard sample which contained 5 percent asbestos. The standard sample was analyzed by both PLM and x-ray diffraction procedures. All samples estimated as less than 10 percent asbestos were reanalyzed by Montgomery County personnel

because the reliability of quantitative asbestos estimates is inversely related to the amount truly present.

Table 1 presents a comparison of polarized light microscopic (PLM) analysis and x-ray diffraction (XRD) analysis of split bulk samples for asbestos. The large range of values associated with certain PLM obser-

TABLE 1. COMPARISON OF POLARIZED LIGHT MICROSCOPIC (PLM) ANALYSIS AND X-RAY DIFFRACTION (XRD) ANALYSIS OF SPLIT BULK SAMPLES FOR ASBESTOS

Sample number	PLM analysis (%)[a]	XRD analysis (%)[b]
1	5 - 20	4.5
2	10 - 25	8.9
3	10 - 30	N/D
4	10	N/D
5	≅5	4.7
6	10 - 20	N/D
7	5	6.2
8	1 - 30	N/D
9	5 - 15	N/D
10	5 - 25	N/D
11	<5	N/D
12	<5	4.0
13	5 - 10	5.9
14	≅5	8.6
15	35	N/D
16	5	2.5
17	10	5.6
18	25	8.4
19	<5	N/D
20	5 - 10	8.6
21	10	4.9
22	10 - 30	4.9
23	-	6.6
24	5 - 10	4.7
25	<5	3.8
26	20 - 40	4.1
27	50 - 75	4.1
28	5 - 20	2.6
29	<5	8.4
30	5 - 10	3.6

N/D = not detectable (<1 percent asbestos).

[a]Polarized light microscopy with or without dispersion staining. Health District laboratory.

[b]X-ray diffraction analysis. Ohio Health Department laboratory.

vations is partly a result of instructions to the microscopists to report their results in ranges compatible with the EPA scoring procedure. The EPA scoring procedure necessitates the grouping of PLM results into three categories: trace amounts to 1 percent asbestos, more than 1 percent up to 50 percent asbestos, and more than 50 percent asbestos. Nine PLM observations, which were positive (greater than 1 percent) for the presence of asbestos fibers, were subsequently reported to be negative when XRD analysis was performed on the second half of the split bulk sample. These data suggest that either the bulk samples were not sufficiently "homogenized" prior to the splitting or that one of the analysis techniques is not very reliable. Yet all PLM analyses were confirmed by other recognized laboratories. These data suggest that the XRD protocol used in the above comparison yielded a number of false negatives.

The EPA has established a program to identify commercial laboratories experienced in the analysis of bulk samples. The program is described in a document entitled "Asbestos-Containing Materials in School Buildings: Bulk Sample Analysis Quality Assurance Program" (EPA Report No. 560/13-80-23, August 1980). The EPA has also supported the development of a PLM laboratory protocol with a more systematic procedure for estimating the asbestos content of bulk samples. This protocol is described in a report entitled "Interim Method for the Determination of Asbestoform Minerals in Bulk Insulation Samples" (Research Triangle Institute).

POTENTIAL EXPOSURE ASSESSMENTS

The Health District collected over 600 bulk samples of suspect materials in the course of surveying 195 schools. Sprayed or trowelled-on, friable, asbestos-containing materials were found in 23 schools, where 75 positive (greater than 1 percent) bulk samples were collected. The 23 schools contained 14,883 students and approximately 488,000 square feet of asbestos-containing material. Five of the 23 schools had at least one area with an asbestos exposure score of "50" or greater. These five potential problem schools contained 5,319 students and approximately 33,000 square feet of asbestos-containing materials.

Asbestos exposure scores were calculated for each of the sampling areas from which the 75 positive samples were selected. To obtain the scores, the

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ratings for material condition, water damage, exposed surfaces, accessibility, activity, and the presence of air plenuns were summed, and the sum was multiplied by the product of the friability rating and the coded asbestos percentage level obtained from the bulk sample analysis. The sampling areas were divided into five groups based upon total asbestos exposure scores and the values of certain components, which contribute to total asbestos exposure scores. Group 1 consisted of those areas with scores equalling less than 10. Group 2 consisted of those areas with scores between 10 and 25, a friability code equalling 1, and repairable water damage or material condition. Group 3 had scores between 10 and 50, friability codes equalling 2 or 3, a water damage code equalling 0, and an accessibility code equalling 1. Group 4 consisted of those areas with total scores between 10 and 50 and an accessibility code equalling 3 or water damage beyond repair. Group 5 consisted of those areas with total scores greater than 50.

Table 2 presents the square footage of asbestos-containing materials in the 23 "positive" schools by asbestos exposure score categories. Note that several schools have asbestos areas with different asbestos exposure categories. Table 3 presents estimated abatement costs by school and abatement procedure. These costs were estimated by multiplying the total square footage of asbestos-containing materials in a given school by two cost-per-square-foot quotations obtained from contractors willing to build enclosures, perform encapsulation, or engage in removal activities. More realistic cost estimates can be obtained by considering the possibility that a combination of abatement procedures is more appropriate for those schools with a series of asbestos areas with differing exposure potentials. Also, it should be noted that unit costs for asbestos abatement procedures should decrease as contractors acquire more experience with a given procedure.

RECOMMENDATIONS

Although 90 percent of the schools in the jurisdiction of the Montgomery County Combined General Health District were built during the period when asbestos was widely used, only 12 percent yielded samples that had a measurable level of asbestos. But the presence of 12,000 students in schools with nearly one-half million square feet of asbestos-containing materials presented school and health officials with a problem, which was not easily solved.

TABLE 2. SQUARE FOOTAGE OF ASBESTOS-CONTAINING MATERIAL BY SCHOOL AND POTENTIAL EXPOSURE SCORES

School	Number of students	Square footage of asbestos-containing material					
		Potential exposure scores					
		<10	10-25[a]	10-50[b]	10-50[c]	>50	Totals
A	1,110	-	71,395	9,680	3,501	-	84,576
B	570	-	-	21,105	-	-	21,105
C	427	-	6,373	-	1,204	-	7,577
D	2,275	-	49,574	12,702	2,827	-	64,103
E	361	-	-	-	946	13,922	14,868
F	2,478	-	-	-	-	5,877	5,877
G	633	-	507	-	-	-	507
H	625	-	4,778	-	-	-	4,778
I	116	-	3,267	-	6,954	-	10,221
J	760	-	13,514	-	-	-	13,514
K	620	-	6,576	-	-	-	6,576
L	420	-	-	3,808	-	5,153	8,961
M	338	-	-	29,000	-	-	29,000
N	417	-	-	19,630	-	-	19,630
O	275	-	11,760	1,580	-	-	13,340
P	1,497	-	-	64,456	1,868	4,232	70,556
Q	375	-	-	22,823	-	-	22,823
R	350	-	-	25,458	1,697	-	27,155
S	181	-	-	1,328	-	-	1,328
T	563	-	-	19 465	-	3,560	23,025
U	314	-	-	12,389	-	-	12,389
W	158	-	-	6,408	2,643	-	9,051
	Totals	0	184,028	249,832	21,640	32,744	488,244

[a]Total potential exposure score between 10 and 25, low friability, and repairable water damage or material condition.

[b]Total potential exposure scores between 10 and 50, moderate to high friability, but no water damage or high accessibility.

[c]Total potential exposure scores between 10 and 50 and high accessibility or water damage.

What is the relationship between EPA's asbestos exposure scores and cumulative asbestos exposure in terms of the time-weighted mass concentration (nanograms per cubic meter) of asbestos in the air inside a particular room? What is the increment in disease risk associated with a specified cumulative asbestos exposure? Since the data that could suggest answers to these questions were not available to the Health District when the asbestos-in-schools survey was completed, the Health District made its decisions

TABLE 3. ESTIMATED ABATEMENT COSTS BY SCHOOL AND ABATEMENT PROCEDURE[a]

School	Enclosure	Encapsulation	Removal
A	13,358 - 26,620	22,651 - 35,429	38,817 - 68,534
B	29,125 - 58,039	49,386 - 77,244	
C			4,828 - 8,524
D	17,529 - 34,931	29,723 - 46,489	11,336 - 20,015
E			59,621 -105,265
F			23,567 - 41,609
I			27,886 - 49,234
L	5,255 - 10,472	8,911 - 13,937	20,664 - 36,483
M	40,020 - 79,750	67,860 -106,140	
N	27,089 - 53,983	45,934 - 71,846	
O	2,180 - 4,345	3,697 - 5,783	
P	88,949 -177,254	150,827 -235,909	24,461 - 43,188
Q	31,496 - 62,763	53,406 - 83,532	
R	35,132 - 70,010	59,572 - 93,176	6,805 - 12,015
S	1,833 - 3,652	3,108 - 4,860	
T	26,862 - 53,529	45,548 - 71,242	14,276 - 25,205
U	17,097 - 34,070	28,990 - 45,344	
W	8,843 - 17,622	14,995 - 23,453	10,598 - 18,712
Totals	344,768 -687,038	584,607 -914,385	218,080 -385,039

[a]Total costs are based upon cost-per-square-foot quotations obtained from two contractors. "Enclosure" refers to the construction of a physical barrier. "Encapsulation" refers to coating friable materials with a sealant.

about recommended abatement procedures by assuming that friability and the condition of the suspect material were the most important factors determining the release of asbestos fibers into the air. Accessibility of materials was given more weight in the decisionmaking process when there was visible evidence of vandalism, which would probably increase true cumulative exposures.

No abatement procedures were recommended for those areas with potential exposure scores between 10 and 25, low friability, and good material condition. If minor damage was present, repair was recommended.

Although the survey located sprayed-on asbestos in only 12 percent of the schools in the Health District's jurisdiction, asbestos materials in the form of insulation wrap used to cover pipes and boilers were found in nearly all schools. It was assumed that these materials could present an occupational hazard to maintenance personnel. It was recommended that asbestos insulation wrap in student use areas should be replaced. Asbestos ceiling

tile was only considered a problem when it was extensively damaged from water or physically abused to the extent that the adhesive properties of the tile were destroyed.

The experience of the Montgomery County Combined General Health District suggests that the identification of potential sources of asbestos exposure in schools is feasible, but careful attention must be paid to the design of the survey, the analysis of bulk samples, and the interpretation of the survey results. The reliability of the data collected during an inspection should be systematically checked by having independent inspectors duplicate part of the work of previous inspectors. The results of this test-retest should be reported. A standard protocol should be followed by the laboratory analyzing the bulk samples. Analyses of split bulk samples should be duplicated to establish the reliability of the bulk-analysis procedures. The results of these duplicate analyses should be reported. A number of the bulk samples should then be analyzed by a "criterion" procedure so that the validity of the "standard" procedure is known. Asbestos exposure scores should be interpreted by examination of published data concerning the relationship between (potential) asbestos exposure scores and actual exposure via increased air levels of asbestos. Decisions concerning appropriate abatement procedures should be made such that costs and asbestos (air level) exposures are minimized.

The EPA is preparing a guidance document to be used by school systems in conducting surveys for asbestos-containing materials. This document is based on traditional statistical principles and has been field tested in Montgomery County, Ohio. The guidance document, entitled "Asbestos-Containing Materials in School Buildings: A Guidance Document for Asbestos Analytical Programs" (EPA Report No. 560/13-80-017), will be available in November 1980.

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Appendix A

Explanatory Letter and School Information Form

ROBERT A. VOGEL, M.D.
HEALTH COMMISSIONER

MONTGOMERY COUNTY
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TO: ALL SCHOOL SUPERINTENDENTS OF SCHOOL DISTRICTS WITHIN MONTGOMERY COUNTY

FROM: DAVID B. PEDEN, M.P.H.
DIRECTOR
DIVISION OF ENVIRONMENTAL HEALTH

DATE: APRIL 16, 1979

On or before April 29, 1979, superintendents of all school districts in Ohio will be receiving documents from the United States Environmental Protection Agency.

These documents concern the potential health risks to school children, school staff, and the general public from possible exposure to asbestos in schools.

Although it is not our intent to downplay the health hazard from exposure to asbestos, it should be noted that (1) asbestos has not been used in schools as a building material since 1973 and therefore exposure risks do not even exist in schools constructed after this period, (2) schools constructed prior to 1973 may or may not have an exposure potential since asbestos may or may not have been used in their construction, and (3) in those schools where asbestos was used, the exposure potential (and health risk) is directly dependent upon numerous additive and multiplicative factors.

Therefore, there is no real or immediate danger in most cases.

However, in order to determine if this problem does exist in your schools, the Montgomery County Health District staff will evaluate the exposure potential, if any, of the schools within your school district during May as we conduct our usual semi-annual inspection. IT IS IMPORTANT TO NOTE THAT IF A PROBLEM DOES EXIST, IT CAN BE CORRECTED.

Preliminary to our evaluation, we ask that the enclosed questionnaire be completed and returned to our offices as soon as possible. The information provided is essential and will enable us to expedite our evaluation. Our evaluation cannot begin without this information.

Should you have any questions, or if we can be of other assistance, please call Terry Wright at 225-4446.

DBP/TLW/njr

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PLEASE COMPLETE AND RETURN THIS INFORMATION TO:

Terry Wright
Montgomery County Health District
451 West Third Street
Dayton, Ohio 45422

SCHOOL DISTRICT:_____

NUMBER OF SCHOOLS
IN YOUR DISTRICT:_____

SUPERINTENDENT:_____ _____
TELEPHONE

	NAME OF SCHOOL	PRINCIPAL'S NAME	TELEPHONE NUMBER	YEAR OF CONSTRUCTION	DATES OF ANY MAJOR REPAIR WORK OR REMODELLING:	DO YOU HAVE THE PLANS AND MATERIAL SPECIFICATIONS ON FILE FOR CONSTRUCTION?	IS THERE ANY REMODELLIN OR MAJOR REPAIR WORK PLANNED FOR THIS SCHOOL IN THE NEAR FUTURE?
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

/16/79

Appendix B

Asbestos Exposure Scoring Procedure

Appendix B

Components of the Potential Exposure Score

Factor	Range or Extent
1. Material Condition (Deterioration/Damage)	None
	Moderate; small areas
	Widespread; severe; pieces dislodged
2. Water Damage	None
	Minor
	Moderate to major
3. Exposed Surface Area	Not exposed. Located above suspended ceiling. None visible without removing panels or ceiling sections.
	10% or less area exposed
	10% to 100% area exposed

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4.	Accessibility	Not accessible
		Low: Rarely accessible
		Moderate to high: Access may be frequent
5.	Activity and Movement	None or low: Libraries, most classrooms
		Moderate: Some classrooms, corridors
		High: Some corridors and cafeterias, all gymnasiums
6.	Air Plenum or Direct Air Stream	None
		Present
7.	Asbestos Content (total % present)	Trace to 1%
		1% to 5%
		5% to 50%
		50% to 100%

8.	Friability	Low friability. Difficult but possible to damage by hand.
		Moderate friability. Fairly easy to dislodge and crush.
		Highly friable. Fluffy, spongy, flaking, pieces hanging.

Potential Exposure Score Calculation

Factor		Code	
1.	Material Condition	_____	(0, 2, 5)
2.	Water Damage	_____	(0, 1, 2, 3)
3.	Exposed Surface	_____	(0, 1, 4)
4.	Accessibility	_____	(0, 1, 3)
5.	Activity and Movement	_____	(0, 1, 2)
6.	Air Plenum	_____	(0, 1, 2)

SUM [1+2+3+4+5+6] = _____

7. % Content _____ (0, 2, 3, 4)

8. Friability _____ (1, 2, 3)

PRODUCT [7 x 8] = _____

EXPOSURE NUMBER = PRODUCT X SUM = _____

OL DISTRICT _____ AREA _____

SCHOOL _____ Hallway, Cafeteria, Classroom No., etc. - Date -

PERSON CONTACTED _____ Sample Material

Name

Sample Number Assigned

TABLE I. FACTOR SCORES

FACTOR	RANGE OR EXTENT	SCORE
I. Material condition (adhesive, cohesive; deterioration or damage)	None Moderate; small areas Widespread, pieces dislodged, evident flaking and crumbling	0 2 5
II. Water damage	None Minor Moderate to major	0 1 2-3
II. Exposed surface area (from the floor looking up)	None-sealed by seldom violated suspended ceiling 10% or less exposed 10-100% exposed	0 1 4
IV. Accessibility	Not accessible Low-mostly unusual maintenance Moderate to high-access may be frequent	0 1 3
V. Activity or Movement	None or low Libraries, non-student use areas Moderate-classrooms, corridors High-some corridors cafeterias, gymnasiums	0 1 2
VI. Air plenum or airstream	None Present	0 1-2
VII. Asbestos content	<1% 1%-30% 30%-60% 60%-100%	0 2 3 4
VIII. Friability	Not friable to low friability-difficult to penetrate with pencil Moderate friability-can push fingers into it Highly friable-cottony, spongy, can easily push hand into it	1 2 3

B-7

Appendix C

Cover Letter Sent to Schools Without Asbestos Problems

Appendix C

ROBERT A. VOGEL, M.D.
HEALTH COMMISSIONER

MONTGOMERY COUNTY
COMBINED GENERAL HEALTH DISTRICT

COUNTY GOVERNMENT PLAZA
451 WEST THIRD STREET
DAYTON, OHIO 45422

DIVISION OF ENVIRONMENTAL HEALTH
DAVID B. PEDEN, M.P.H., DIRECTOR
513 - 225-4443

BOARD OF HEALTH
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MRS. MARTHA CARRICK - VICE-PRESIDENT
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MRS. MARIE DAUGHERTY
JOHN DOAN
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W. J. LEWIS, M.D.
EDWARD RAUSCH
CHARLES F. WILCHER, JR., D.O.

September 19, 1979

Bill M. Stephan, Superintendent
Brookville Schools
325 Simmons Street
Brookville, Ohio 45309

RE: Asbestos Survey

Dear Mr. Stephan:

The school asbestos survey of all school districts in Montgomery County has been concluded. As you know, this survey was part of the United States Environmental Protection Agency (USEPA) nationwide voluntary school asbestos program, and its purpose was to identify potential health risks from sprayed-on asbestos containing material.

All schools within the Brookville School District were inspected for sprayed-on asbestos materials, and USEPA assessment procedures were followed. However, no schools within your district have been identified as having sprayed-on asbestos materials used in their construction.

Sprayed-on asbestos materials were found in every school district within the jurisdiction of the Health District but four.

Although located in non-student use areas, other asbestos containing materials were found in nearly all schools, however, and if damaged may present an occupational hazard to maintenance personnel and others who have access to these areas. These areas involve primarily boiler rooms where asbestos insulation wrap was used on pipework and boiler jackets. In addition, heating pipes with asbestos wrap in student use areas were found in schools, and this material should be replaced with a non-asbestos insulating material.

Finally, many schools contained asbestos ceiling tile. Asbestos ceiling tiles are considered a problem only when extensively damaged from water or physically abused to the extent that the adhesive properties of the tile are destroyed. These conditions will not occur in schools with an adequate maintenance program of replacement of damaged tiles.

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Should either of these conditions be found in any of your schools, adequate maintenance procedures should be followed.

A copy of the Health District's report on all schools within its jurisdiction is enclosed for your information.

If you have any questions concerning this report or should further assistance be necessary, please call at 225-4446.

Sincerely,

Terry L. Wright, M. P. H.
Supervisor
Bureau of General Services

TLW/dlg

Enclosures

cc: David B. Peden, M. P. H.
Director
Division of Environmental Health

Raymond Hopper
Superintendent
Montgomery County Schools

Appendix D

Cover Letter and Supporting Documentation Sent to Schools with Asbestos Problems

ROBERT A. VOGEL, M.D.
HEALTH COMMISSIONER

MONTGOMERY COUNTY
COMBINED GENERAL HEALTH DISTRICT

COUNTY GOVERNMENT PLAZA
451 WEST THIRD STREET
DAYTON, OHIO 45422

DIVISION OF ENVIRONMENTAL HEALTH
DAVID B. PEDEN, M.P.H., DIRECTOR
513 - 225-4443

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JOHN DOAN
MRS. VERGREE HARRIS
W. J. LEWIS, M.D.
EDWARD RAUSCH
CHARLES F. WILCHER, JR., D.O.

September 19, 1979

Lowell C. Draffen, Superintendent
Valley View Schools
64 Comstock Avenue
Germantown, OH 45327

RE: Asbestos Survey

Dear Dr. Draffen:

The school asbestos survey of all school districts in Montgomery County has been concluded. As you know, this survey was part of the United States Environmental Protection Agency (USEPA) nationwide voluntary school asbestos program, and its purpose was to identify potential health risks from sprayed-on asbestos containing material. The survey results are summarized as follows.

Within the total jurisdiction of the Health District, twenty-three (23) schools or 11.8 percent were determined to have sprayed-on asbestos material in them, and over twelve thousand students may be exposed to the airborne release of asbestos fibers. Nearly one half million square feet of sprayed-on asbestos material was used in the construction of these schools. All but four school districts had one or more schools in their system requiring abatement action. Although located in non-student use areas, asbestos containing materials were found in nearly all schools, however, and if damaged may present an occupational hazard to maintenance personnel and others who have access to these areas. These areas involve primarily boiler rooms where asbestos insulation wrap was used on pipework and boiler jackets. In addition, heating pipes with asbestos wrap in student use areas were found in many schools, and this material should be substituted with a non-asbestos insulating material.

Many schools contained asbestos ceiling tile. Asbestos ceiling tiles are considered a problem only when extensively damaged from water or physically abused to the extent that the adhesive properties of the tile are destroyed. These conditions will not occur in schools with an adequate maintenance program of replacement of damaged tiles.

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Fortunately, almost all (98 percent) of the sprayed-on asbestos material was low to moderate in friability (softness), and the material condition relative to adhesive and cohesive properties was inherently better in materials of lesser friability. Consequently, it was possible to make recommendations requiring abatement actions of lesser degree (and expense).

There is a distinct difference between exposure potential and exposure problem as viewed by the Health District. Exposure potential is distinguished from exposure problem based on degree of risk with the former meaning that existing conditions or factors would not be facilitative to the release of fibers although asbestos is present in the material and the latter meaning that factors are indeed present for the release of fibers and consequential exposure, there is immediate cause for concern, and corrective action is necessary.

The USEPA shares this view, and has determined that the presence of sprayed asbestos containing material does not necessarily constitute a risk to the public health; only if the material is flaking or damaged is the asbestos material an immediate cause for concern.

Accordingly, deferred action was recommended to nine schools having a combined total of 184,028 square feet of material based on exposure values and the above factors, enclosure or encapsulation was recommended as a minimum abatement action for thirteen schools having a combined total of 249,832 square feet, and 54,384 square feet were recommended to be removed from twelve schools.

All schools within the Valley View School District were inspected for sprayed-on asbestos material, and USEPA assessment procedures were followed.

The Health District has identified three schools within the Valley View School District to have sprayed-on asbestos material used in their construction:

1. Germantown Elementary
2. Germantown Middle
3. Farmersville Elementary

Asbestos was identified by polarized light microscopy (PLM) using dispersion staining technique. Additional samples were taken and again confirmed as containing asbestos; finally positive identification was made using x-ray diffraction (XRD). Use of asbestos was extensive in all three schools with a combined total of 29,051 square feet for these schools.

Exposure problems were only apparent in certain areas of Farmersville Elementary and will require abatement action (Table I). A combination of removal and encapsulation will be necessary for 8,961 square feet of asbestos material in Farmersville Elementary.

Five groups of exposure value ranges have been recognized by the Health District and includes an additional category 10-25[a] (Table II). This group acknowledges those areas where conditions are not facilitative for the airborne release of asbestos fibers and is based on the premise that if the material is not flaking or damaged, then there is no exposure problem and threat to the public health. Specifically, this group includes material where the exposure value is 10-25, the friability of the material is one or cementitious, and if damaged, it is repairable.

Additional qualification of this group is necessary. Damage can only be minor and any water damage must be minimal. Contrary to USEPA guidelines, accessible material has also been included in this group when there is an apparent lack of vandalism. It is absolutely essential that the integrity of the adhesive and cohesive properties be maintained. Upon consultation with the school architect and asbestos contractor, it may very well be that additional abatement activity is necessary and cost effective. Therefore, it must be realized that figures in column 10-25[a] are maximum figures only and are necessarily inflated while figures in columns 10-50[b] and 10-50[c] are only minimum. Accordingly, all Health District recommendations are therefore minimum measures that should require first priority for correction.

Recommended abatement actions are listed in Table III according to risk assessment. It is essential to recognize that while action may be deferred in certain areas of Germantown Elementary and Middle Schools, a continuous monitoring program must be established since conditions in these areas may change.

In summary, action may be deferred for 20,090 square feet of asbestos material in Germantown Elementary and Middle Schools under the restrictions as outlined in Table III. Encapsulation is the minimum recommendation for the classrooms in Farmersville Elementary, provided the affected damaged areas can be effectively removed and repaired and the roof assured against leaking. The sprayed-on material in the hallway and cafeteria needs to be removed.

All asbestos removal projects (demolition) are subject to Title 40, Part 61, U.S. Environmental Protection Agency Regulations for Asbestos; Title 29, Part 1910, U.S. Department of Labor-Occupational Safety and Health Administration (OSHA) Asbestos Regulations; and Regulation 150, Hazardous Air Pollution Control

Regulation, Montgomery County Combined General Health District (copy enclosed). Please refer to Appendices A and C of the EPA Guidance Document, Part I, for the OSHA and USEPA regulations.

It is imperative that any abatement action undertaken is performed by qualified personnel. Therefore, Chapter 9, Specifications and Requirements for Contractors Guidance Document is appropriate for your review. Personnel unqualified or untrained in asbestos abatement may create additional exposure problems both to themselves and the public.

Also enclosed are the factor sheets and laboratory documentation.

The Health District will provide additional consultative or advisory assistance as needed.

If you have any questions concerning this report or should further assistance be necessary, please call 225-4446.

Sincerely,

Terry L. Wright, M.P.H.
Supervisor
Bureau of General Services

TLW/njr

Enclosures

cc: David B. Peden, M.P.H.
Director
Division of Environmental Health

Raymond Hopper, Superintendent
Montgomery County Schools

VALLEY VIEW SCHOOLS

TABLE I. Summary of areas with selected factors where sprayed-on asbestos was found and recommended actions of abatement.

SCHOOL	SQUARE FEET BY AREA	MATERIAL CONDITION	WATER DAMAGE	ACCESSIBILITY	F	EXPOSURE VALUE	RECOMMENDED ACTION
Germantown Elementary	=13,514						
a. hallway	1,889.33	0	0	1	1	14	Defer
b. classrooms	11,625	0	0	1	1	12	Defer
Germantown Middle	= 6,576						
a. hallway	4,101	0	0	1	1	21	Defer
b. cafeteria	2,475	0	0	1	1	21	Defer
Farmersville Elementary	= 8,961						
a. hallway	2,149.75	5	2-3	1	2	56-60	Remove
b. classroom	2,856	2	0-1	1	2	32-36	Repair, encapsulate
c. music room	952	2	0-1	1	2	36-40	Repair, encapsulate
d. cafeteria	3,003	2-5	2-3	1	2	44-60	Remove

TABLE II. Square feet of asbestos containing material by school according to risk assessment.

SCHOOL	Exposure Values					TOTALS
	<10	10-25[a]	10-50[b]	10-50[c]	>50	
A		71,395	9,680	3,501		84,576
B			21,105			21,105
C		6,373		1,204		7,577
D		48,574	12,702	2,827		64,103
E				946	13,922	14,868
F					5,877	5,877
G		507				507
H		4,778				4,788
I		3,267		6,954		10,221
J		13,514				13,514
K		6,576				6,576
L			3,808		5,153	8,961
M			29,000			29,000
N			19,630			19,630
O		11,760	1,580			13,340
P			64,456	1,868	4,232	70,556
Q			22,823			22,823
R			25,458	1,697		27,155
S			1,328			1,328
T			19,465		3,560	23,025
U			12,389			12,389
V		17,284				17,284
W			6,408	2,643		9,051
TOTALS	0	184,028	249,832	21,640	32,744	488,244

[a] 10-25 and friability = one or cementitious, exposure value = 10-25, good adhesive/cohesive properties and no water damage; or if minor water damage or other minor material damage, material is repairable and necessary repairs are made.

[b] 10-50 and friability ≥2, no water damage and/or no high accessibility; or if minor water damage, affected areas are effectively removed.

[c] 10-50 and either high accessibility or water damaged beyond repair.

TABLE III. Recommended abatement actions based on exposure values and other factors.

10 or less	deferred action[1]
10-25[a] and friability = one or cementitious, good adhesive and cohesive properties, non-vandalized, and no water damage; or if water damage or other minor material damage, material is repairable and necessary repairs are made	deferred action[1]
10-50[b] and friability ≥ two, no water damage and/or no high accessibility; or if minor water damage, affected areas are effectively removed	enclose[2] or encapsulate[3]
10-50[c] and either high accessibility or water damaged beyond repair	remove[4]
greater than 50	remove[4]

[1] deferred action — for this area no action is needed at this time; however, continuous monitoring for change in conditions is necessary; also asbestos warning labels should be posted

[2] enclosure — must be complete with no accessibility or strictly regulated entry; labels should be posted warning of presence of asbestos hazard; building must be able to support the additional weight; also fire rating, soundproofing considerations

[3] encapsulation — material must have good adhesive and cohesive strength; choose bridging or penetrating sealant depending on friability; posting of asbestos hazard signs applicable

[4] removal — only ultimate solution; material may have to be substituted for fireproofing/soundproofing considerations

SCHOOL DISTRICT VALLEY VIEW

AREA HALL & MALL ROOMS IN 1-3 GRADE — 7/31/77
Hallway, Cafeteria, Classroom No., etc. Date

SCHOOL GERMANTOWN ELEMENTARY

CEILING - A SPONGY MATERIAL
Sample Material

PERSON CONTACTED DAN RUSSEL
Name

352-31-6
Sample Number Assigned

TABLE I. FACTOR SCORES

	FACTOR	RANGE OR EXTENT	SCORE
I.	Material condition (adhesive, cohesive; deterioration or damage)	None	(0)
		Moderate; small areas	2
		Widespread, pieces dislodged, evident flaking and crumbling	5
I.	Water damage	None	(0)
		Minor	1
		Moderate to major	2-3
I.	Exposed surface area (from the floor looking up)	None-sealed by seldom violated suspended ceiling	0
		10% or less exposed	1
		10-100% exposed	(4)
V.	Accessibility	Not accessible	0
		Low-mostly unusual maintenance	(1)
		Moderate to high-access may be frequent	3
V.	Activity or Movement	None or low Libraries, non-student use areas	
		Moderate-classrooms, corridors	
		High-some corridors cafeterias, gymnasiums	
VI.	Air plenum or airstream	None	
		Present	(
VII.	Asbestos content	<1%	
		1%-30%	2 p. 40
		30%-60%	
		60%-100%	
VIII.	Friability	Not friable to low friability-difficult to penetrate with pencil	
		Moderate friability-can push fingers into it	
		Highly friable-cot[illegible] y, one ca	

ASBESTOS ANALYSIS

DATE 8-1-79 SAMPLE NO. 352-31-6

ANALYTICAL METHOD PLOM Beige Stone - 1,555

DESCRIPTION Fine fibrous clinging debris
Lt Blue, Lt Magenta

TYPE OF ASBESTOS Chrysotile - 20-40%

OTHER MATERIAL Cellulose

ANALYST C. Williams RS

WBK/sc
6-11-79

SCHOOL DISTRICT VALLEY VIEW

AREA HALLWAY — 7/31/7?
Hallway, Cafeteria, Classroom No., etc. — Date

SCHOOL VALLEY VIEW MIDDLE SCHOOL

CEILING (SPONGY MATERIAL) PAINTED
Sample Material

PERSON CONTACTED LOYD CLENSY
Name

352-31-5
Sample Number Assigned

*NOTE: ALSO IN CENTRAL HALLWAY IN GERMANTOWN ELEM. SCHOOL

TABLE I. FACTOR SCORES

FACTOR	RANGE OR EXTENT	SCORE
. Material condition (adhesive, cohesive; deterioration or damage)	None.....(0) Moderate; small areas....2 Widespread, pieces dislodged, evident flaking and crumbling.....5	
. Water damage	None.....(0) Minor.....1 Moderate to major.....2-3	
. Exposed surface area (from the floor looking up)	None-sealed by seldom violated suspended ceiling.....0 10% or less exposed.....1 10-100% exposed.....(4)	
. Accessibility	Not accessible.....0 Low-mostly unusual maintenance.....(1) Moderate to high-access may be frequent...3	
V. Activity or Movement	None or low Libraries, non-student use areas..... Moderate-classrooms, corridors..... High-some corridors cafeterias, gymnasiums.....(	
VI. Air plenum or airstream	None..... Present.....(1	
VII. Asbestos content	<1%..... 1%-30%..... 30%-60%....50-75.....(60%-100%.....	
VIII. Friability	Not friable to low friability-difficult to penetrate with pencil.....(Moderate friability-can push fingers into it..... Highly friable-	

D-12

ASBESTOS ANALYSIS

DATE 8-1-79 SAMPLE NO. 350-71-5

ANALYTICAL METHOD PLM Dispersion Staining

DESCRIPTION Joint compound skim coat - 2 Blue
11 Magenta

TYPE OF ASBESTOS Chrysotile - 50-75%

OTHER MATERIAL Plaster

ANALYST G. L. C. Chemists

WBK/sc
6-11-79

SCHOOL DISTRICT VALLEY VIEW

SCHOOL FARMERSVILLE ELEMENTARY

PERSON CONTACTED _____
Name

AREA SOUTH WALL
Hallway, Cafeteria, Classroom No., etc.

SPRAYED ON CEILING
Sample Material

365-31-2
Sample Number Assigned

7/31/79
Date

TABLE I. FACTOR SCORES

FACTOR	RANGE OR EXTENT	SCORE
Material condition (adhesive, cohesive; deterioration or damage)	None Moderate; small areas Widespread, pieces dislodged, evident flaking and crumbling	0 2 (5)
Water damage	None Minor Moderate to major	0 1 (3)
Exposed surface area (from the floor looking up)	None-sealed by seldom violated suspended ceiling 10% or less exposed 10-100% exposed	0 1 (4)
Accessibility	Not accessible Low-mostly unusual maintenance Moderate to high-access may be frequent	0 1 (3)

FACTOR	RANGE OR EXTENT	SCO
V. Activity or Movement	None or low Libraries, non-student use areas Moderate-classrooms, corridors High-some corridors cafeterias, gymnasiums	0 1 (2)
VI. Air plenum or airstream	None Present	0 (1)
VII. Asbestos content	<1% 1%-30% 30%-60% 60%-100%	0 (2) 3 4
VIII. Friability	Not friable to low friability-difficult to penetrate with pencil Moderate friability-can push fingers into it Highly friable-to	1 (3)

ASBESTOS ANALYSIS

DATE 6-1-79 SAMPLE NO. 365-31-2

ANALYTICAL METHOD PLM Dispersion Staining - 1.555

DESCRIPTION Pink fibrous sheeting fabric
+ Blue & Magenta

TYPE OF ASBESTOS Chrysotile - 20-45%

OTHER MATERIAL Cellulose, Mineral Fibers

ANALYST C. Williams RT

WBK/sc
6-11-79

SCHOOL DISTRICT VALLEY VIEW

SCHOOL FARMERSVILLE ELEMENTARY

PERSON CONTACTED _____
Name

AREA MAIN HALL ABOVE PASS THRU DOOR
Hallway, Cafeteria, Classroom No., etc.

SPRAYED ON CEILING MATERIAL
Sample Material

365-31-3
Sample Number Assigned

7/31/79
Date

TABLE I. FACTOR SCORES

FACTOR	RANGE OR EXTENT	SCORE
I. Material condition (adhesive, cohesive; deterioration or damage)	None.....0 Moderate; small areas....2 Widespread, pieces dislodged, evident flaking and crumbling.....(5)	
II. Water damage	None.....0 Minor.....1 Moderate to major.....(2-3)	
III. Exposed surface area (from the floor looking up)	None-sealed by seldom violated suspended ceiling.....0 10% or less exposed.....1 10-100% exposed.....(4)	
IV. Accessibility	Not accessible.....0 Low-mostly unusual maintenance.....1 Moderate to high-access may be frequent..(3)	
V. Activity or Movement	None or low Libraries, non-student use areas..... Moderate-classrooms, corridors..... High-some corridors cafeterias, gymnasiums.....(	
VI. Air plenum or airstream	None..... Present.....(1)	
VII. Asbestos content	<1%..... 1%-30%...4-5.....(30%-60%..... 60%-100%.....1	
VIII. Friability	Not friable to low friability-difficult to penetrate with pencil.....1 Moderate friability-can push fingers into it.....(Highly friable- tt[illegible]gy an	

D-16

ASBESTOS ANALYSIS

DATE ~~5-1-79~~ 5-1-79 SAMPLE NO. 365-31-3

ANALYTICAL METHOD PLM Dept. Stain - 1.555

DESCRIPTION Fine fibers clinging to
1 - Blue, 1 - Magenta

TYPE OF ASBESTOS Chrysotile - 40-50%

OTHER MATERIAL Cellulose, plastic, & binders

ANALYST A Allen RS

WBK/sc
6-11-79

ASBESTOS ANALYSIS

DATE 9-11-79 SAMPLE NO. 303-7-4

ANALYTICAL METHOD PLM Disp. Stain - 1.550

DESCRIPTION fine frayed clinging fibers
L - Blue, M - Magenta

TYPE OF ASBESTOS Chrysotile - 25-45%

OTHER MATERIAL cellulose, plaster

ANALYST G.W.

WBK/sc
6-11-79

ASBESTOS ANALYSIS

DATE 4-11-79 SAMPLE NO. 303-7-3

ANALYTICAL METHOD PLM Disp. Stain - 1.550

DESCRIPTION fine frayed clinging fibers
1 - Blue, 11 - Magenta

TYPE OF ASBESTOS Chrysotile - 20-40%

OTHER MATERIAL cellulose, plast.

ANALYST G.U.

WBK/sc
6-11-79

ASBESTOS ANALYSIS

DATE 9-11-79 SAMPLE NO. 303-7-2

ANALYTICAL METHOD PLM Disp. Stain - 1550

DESCRIPTION none

TYPE OF ASBESTOS none

OTHER MATERIAL plaster

ANALYST CW.

WBK/sc
6-11-79

ASBESTOS ANALYSIS

DATE 9-11-79 SAMPLE NO. 303-7-1

ANALYTICAL METHOD PLM Dip Stain - 1,550

DESCRIPTION fine frayed chrysotile fibers
I - Blue, II - Magenta

TYPE OF ASBESTOS Chrysotile - 50-70%

OTHER MATERIAL cellulose, fiberglass

ANALYST G-W

WBK/sc
6-11-79

ASBESTOS ANALYSIS

DATE 9-11-79 SAMPLE NO. 353-7-1

ANALYTICAL METHOD PLM Dip Stain - 1.550

DESCRIPTION fine frayed clinging fibers
1 - Blue, 11 - Magenta

TYPE OF ASBESTOS Chrysotile - 40-60%

OTHER MATERIAL plastic

ANALYST G.V.

WBK/sc
6-11-79

ASBESTOS ANALYSIS

DATE 9-11-79 SAMPLE NO. 325-7-1

ANALYTICAL METHOD PLM Dip Stain - 1.550

DESCRIPTION fine frayed clinging fibers
1 - Blue, 11 - Magenta

TYPE OF ASBESTOS Chrysotile - 60-75%

OTHER MATERIAL plaster

ANALYST G.W.

WBK/sc
6-11-79

Appendix E

News Releases and an Editorial Concerning the Health District's Asbestos Program

NEWS RELEASE

Montgomery County Combined General Health District
151 West 3rd Street, Dayton, Ohio 45422
Public Information Office, 225-4403

October 29, 1979

Contact person: David B. Peden, Director
Environmental Health Division
225-4443

FOR IMMEDIATE RELEASE

The Montgomery County Health District recently surveyed all area schools to assess the public health significance where asbestos was used in building construction. Findings indicate that some problem areas need to be addressed, but based upon United State Environmental Protection Agency assessment procedures, there are no schools in the Montgomery County Health District where the situation is considered immediately dangerous to the health of the children.

Where a problem with asbestos does exist there are several corrective alternatives available. The schools in Montgomery County have been apprised of suggested corrective measures and are working with the Health District to eliminate any potential problem spots.

Supervisor Terry Wright of the Health District, responsible for school inspections, explained, "We've been working very closely with the schools since we first started the survey. Where

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problems have been found, the schools have been eager to take appropriate corrective steps."

Asbestos is a known carcinogen and with excessive exposure can cause lung diseases and other problems. Director of the Environmental Health Division of the Health District, Dave Peden, cautions however, "The asbestos danger in our schools is different from that which occurs in many occupational environments. Most health problems have resulted from high and repeated exposure over a long time period. In the school we seldom see a high exposure level. We're trying to reduce any damage which might result from low exposure levels over long periods of time."

Asbestos is a component in many materials which the public uses every day. As long as the asbestos fibers are not airborne where they can be inhaled into the body, they are not dangerous. The bulk of the problem comes from asbestos-containing materials being damaged, or being installed so that they release fibers into the air.

Survey results show twenty-three schools in the area have sprayed-on asbestos material which could cause problems. Each affected school has been given recommendations by the Health District on corrective steps necessary. The Health District anticipates these steps will be started in the summer of 1980. All areas where asbestos needs to be removed as quickly as possible have been sealed off and restricted by the respective school administrators.

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While asbestos was used extensively for fireproofing, sound-proofing, and other purposes in school construction during the post-WW II days, its use was finally banned in 1973 because of the hazards involved. Wright explained further, "One of our primary concerns now is that when corrective steps are taken, they must be done in such a way that the workers' health won't be jeopardized and it's essential that careless procedures don't result in more contamination than before the treatment."

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NEWS RELEASE

MONTGOMERY COUNTY SCHOOLS

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October 29, 1979

IMMEDIATE RELEASE

"There is no immediate health danger from asbestos in the public school buildings in the county, according to a recent extensive inspection by the county health district," Dr. Raymond Hopper, Montgomery County Superintendent, said.

The following information is based upon preliminary inspections made by the Montgomery County Combined General Health District, Dr. Hopper said.

Inspections revealed that sprayed-on asbestos was used in the construction of 19 of the 170 public school buildings in the eight local and seven city school systems in the health district.

Asbestos is only a potential health problem when the fibers become airborne. It was used in school buildings constructed before 1973 when possible dangers of deteriorated asbestos were unknown.

Three of the 19 buildings where the material was found in potentially hazardous condition, the health department recommended immediate corrections be made. Those three school buildings were Daytons' Patterson Cooperative Highschool, Vandalia-Butler High School and Farmersville Elementary School in the Valley View local district.

This past week those corrections were made, Dr. Hopper said.

In 12 of the buildings there is not an immediate health danger but the health district has recommended that treatment of the material be started in the summer of 1980.

These buildings include Dayton City Schools' Horace Mann and Patterson

(MORE)

Kennedy elementaries, Jefferson Township Local Schools' Radcliff Elementary, Kettering City Schools' Orchard Park Elementary, Mad River Local Schools' Stebbins High School, New Lebanon Local Schools' New Lebanon Elementary, Northmont Local Schools' Northmont High School and Union Elementary, Northridge Local Schools' Timberlane and Grafton Kennedy elementaries, Vandalia-Butler City Schools' Demmitt Elementary and Wayne Local Schools' Kitty Hawk Elementary. Also in this category, but previously mentioned, are Vandalia-Butler City Schools' high school and Valley View Local Schools' Farmersville Elementary.

The remaining four buildings will be only routinely monitored and inspected by the health department to insure that any materials containing asbestos does not deteriorate and create a potential health hazard.

These buildings are Valley View Local Schools' Germantown Middle and Germantown Elementary and West Carrollton City Schools' West Carrollton High School and Russell Elementary.

Several of the schools where some type of treatment is recommended also have areas where only monitoring is necessary.

A timetable for correction will be developed by each individual school district.

The major concern of the school officials, Dr. Hopper continued, has been to eliminate any possible danger and to protect the health and safety of all students and staff members.

"This community is most fortunate to have a health district that initiated an investigation and recommended corrections of this potential health hazard for the welfare of its citizens," he said.

Also Dr. Hopper praised the unique cooperation among area schools. "The area school officials have demonstrated an outstanding degree of full cooperation to share information and ideas to solve a potential problem. They are taking every reasonable precaution to insure the health and safety of both students and staff members," he said.

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EDITORIAL

WHIO television · am · fm
1414 Wilmington Avenue Dayton, Ohio - 45401

AN OPINION OF THE MANAGEMENT

Requests in writing from qualified groups or individuals to express opposing opinions on this station will be welcomed.

JACK HURLEY
EDITORIAL DIRECTOR
WHIO-TV-AM-FM

NOVEMBER 1, 1979

Montgomery County residents this week got a good look at how public agencies ought to work on their behalf. The Montgomery County Combined General Health District and area schools took a positive and aggressive initiative in dealing with a potentially serious health hazard.

Working quietly and cooperatively the schools and the health district surveyed school buildings in search of asbestos construction materials that might have deteriorated and might pose some problems. They found some potential problems and moved quickly to isolate them.

In short they performed their public and personal duties in a manner that could serve as a role model for all area governmental agencies. They were effective, aggressive and completely upfront. Indications are that many of Ohio's health districts and school districts are way behind Montgomery County in dealing with the asbestos problem... if indeed they are dealing with it at all. County school Superintendent, Ray Hopper and Dayton school Superintendent, John Maxwell, along with their staffs and boards took the potential problem and their obligations to students and parents seriously....as did other Superintendents and the combined General Health District.

Problem areas and potential problem areas have been identified and are being dealt with....and being dealt with openly. Based on their attitudes and approaches...the public has every right to have as much confidence in the school officials and health district as we do.

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